



U.S. Environmental Protection Agency, Region 6 Printer Consolidation Case Study

Updated: 12/13/2011

SUMMARY

The U.S. Environmental Protection Agency (EPA), Region 6 analyzed the environmental and financial impact of printers and developed and implemented a strategy for printer consolidation that resulted in significant environmental and financial benefits.

INKJET PHASE OUT

Introduction and Drivers

Our Region was looking for ways to reduce costs and our environmental footprint. We reviewed the printing systems in our offices to look for ways to improve and discovered the following:

- Some people had personal desktop printers, and others were using shared network printers.
- Two types of printer technologies dominated our office: laser jet and inkjet technology.
- The current inkjet models we had made it difficult to print double sided; users have to print one side and then manually re-feed the paper to print the other side.
- One page printed using a personal desktop inkjet printer costs the agency up to 14 times as much money as one page printed using a more robust and faster network multi-function unit.
- One network laser printer can replace 10-12 desktop inkjet printers (black and white printing).
- Printing time using a laser printer is 2 to 3 times faster than using an inkjet printer.
- We were spending a third of our annual printing costs on operating desktop inkjet printers which only accounted for 15% of our printing, as shown in the table below.

Printer Operation Costs

Printer Type	Approx. % of Printing	Annual Cost Per Printer	Annual Cost Total	% of Annual Cost
Inkjet-Desktop	15	\$171 - \$237*	\$54K – \$65K	32
Laser-Desktop	5	\$60**	\$5K	3
Laser-Network	70	\$750**	\$63K	34
Color Laser-NW	5	\$3,375**	\$54K	29
Multifunction Copiers	5	\$130**†	\$2K	1
TOTALS	100	---	\$178K – \$189K	100

* Includes Ink cartridges and support costs, excludes paper & power usage, assumes 30%-50% printed page coverage

** Based upon contracted per-page fee and actual page counts, excludes paper & power usage

† Does not include photocopy usage – network printing only

Workgroup Creation

Based on this information, EPA Region 6 formed a workgroup to provide recommendations to reduce the number of desktop inkjet printers in the Region. The workgroup consisted of Program Analysts (PAs) and Administrative Officers (AOs) from each division along with key management division personnel, technical staff, and representatives from the Environmental Management System (EMS) committee and the Union.

Issues and Challenges

We had 161 desktop inkjet printers in the Region. There were a number of concerns voiced about phasing out the inkjet printers, including:

- There weren't enough color network printers to handle current demand for color jobs, since many of the personal desktop inkjet printers printed in color.
- How to handle confidential print job needs, since many users enjoyed the confidentiality of printing at their desk.
- Network printers may not be conveniently placed for all staff.
- One network printer may get too much load on it from staff switching over.
- People would feel angry and reluctant about giving up their desktop printer.
- Divisions were unwilling to give up anything without something in return.
- Concerns for people with mobility issues.

Analysis and Commitment

We performed an analysis of printer capabilities and mapped out each floor (see example below).

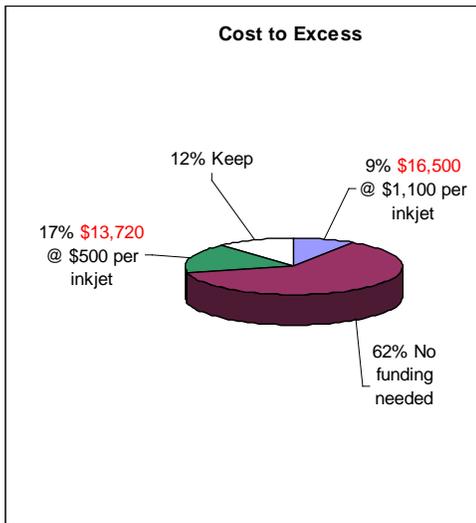


The analysis determined that:

- Most network printers have the capability of sending pass code protected print jobs. Using these codes, the printer would not release the job for print until a 4 digit number was physical inputted at the printer. This functionality could accommodate confidential printing needs.
- With a little rearranging of network printers, no one user would have to walk too far to get to a network black and white, or color, printer.
- No network printer would get overloaded.
- There was a legitimate argument for the lack of color printing resources.
- There might be a lot of pushback from staff.
- Many divisions were very reluctant to give up inkjets without any kind of compensation.

The group agreed on exceptions that would allow someone to keep their inkjet printer, including: users with limited mobility; users that routinely have confidential color printing needs; or users printing special tasks (i.e., 104(e) letter).

Each division's PA took responsibility for analyzing their staff needs and coming up with a committed number of desktop inkjet printers they could get rid of without incurring any additional costs; spreading resources too thin; or inconveniencing too many people. See cost analysis and commitment below:



A 62% reduction of inkjet printers is achievable without investment cost provided there is equitable sharing of network printers.

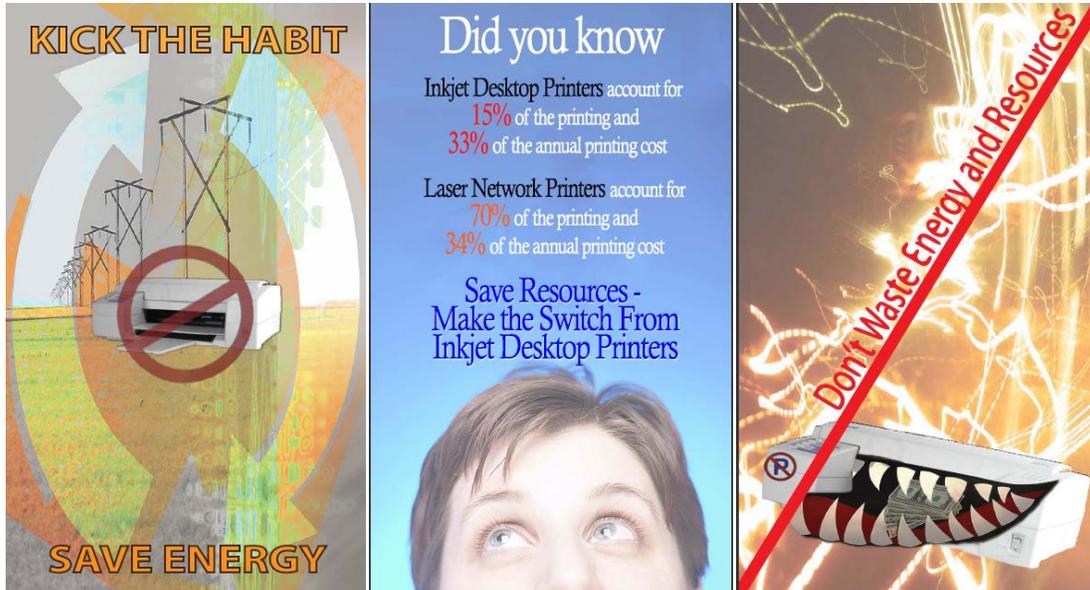
62% Reduction (with no funding)				
	Total Inkjets	Proposed Reduction	Percentage Reduction	Inkjets Remaining
6XA	6	6	100%	0
6PD	19	10	53%	9
6WQ	17	11	65%	6
6SF	23	15	65%	8
6EN	23	9	39%	14
6RC	12	7	58%	5
6RA	11	5	45%	6
6MD	50	37	74%	13
Total	161	100	62%	61

The group also agreed that the Region would no longer purchase new desktop inkjet printers, and would not replace old ones that break.

Implementation Strategy

The group briefed the Assistant Regional Administrator on our 62% reduction goal and expected results, and was given the go ahead to implement the commitments.

We developed written and video instructions on how to print to network printers and how to send confidential print jobs. We also developed posters (see below), an All Employee Memo and a news article to get staff familiar with the idea and show them the reasons behind this phase out and senior staff's support and own commitment to phasing out inkjet printers. We coordinated with management to start excessing in phases to avoid overwhelming the technical staff.



Results

Our work resulted in a 62% reduction of inkjet desktop printers which results in the following financial savings and environmental impact improvements:

Financial benefits:

- Savings of \$37,200 annually by cutting out ink cartridge, paper costs and redirecting help desk support resources.

Environmental benefits:

- Reduced paper consumption by 25%.
- Reduced electricity consumption in overall printer power usage by roughly 12%.
- Reduced energy and materials used in manufacture of new ink cartridges and ink.

Lessons Learned

- It was believed early on that no network printers could accommodate confidential printing needs. It was found out later that most network printers, including some color printers, could print confidential print jobs. This information would have been more beneficial if it was know earlier in the process so that more printers may have been excessed.
- In one division some staff had their desktop inkjet printer taken away before being formally notified of the change. This led to complaints that may have been avoided.
- Overall, there was a lot of time spent in discussions and negotiations because divisions were divided in opinion. Some of this time might have been saved with better leadership or more involvement with management, or even workgroup members focusing more on the environmental and financial benefits of the whole rather than the convenience and compensation of the few. However, much of this time was probably necessary to make sure everyone's voice was heard and that everyone felt that their concerns were being addressed.



**U.S. Environmental Protection Agency,
Region 6
Printer Consolidation Case Study**

Updated: 12/13/2011

CONTACT INFORMATION

If you have questions related to this resource or need other assistance with the Federal Electronics Challenge, please contact your Regional Champion: <http://www2.epa.gov/fec/technical-assistance>.

Visit the FEC online: <http://www2.epa.gov/fec/>

E-mail the FEC: fec@epa.gov